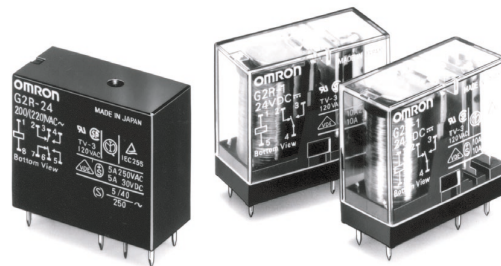


A Power Relay for a Variety of Purposes with Various Models

- Conforms to VDE0435 (VDE approval: C250 insulation grade), UL508, CSA22.2, SEV, SEMKO.
- Meets VDE0700 requirements for household products according to VDE0110.
- Clearance and creepage distance: 8 mm/8 m.
- Models with CTI250 material available.
- High-sensitivity (360 mW) and high-capacity (16 A) types available.
- Double-winding latching type available.
- Plug-in with test button and quick-connect terminals available.
- Highly functional socket available.



Ordering Information

| Classification | | Enclosure ratings | Coil ratings | Contact form | | | |
|-------------------------|--|-------------------|-----------------|--------------|------------|----------|------------|
| | | | | SPST-NO | SPDT | DPST-NO | DPDT |
| PCB terminal | General-purpose | Flux protection | AC/DC | G2R-1A | G2R-1 | G2R-2A | G2R-2 |
| | | Fully sealed | | G2R-1A4 | G2R-14 | G2R-2A4 | G2R-24 |
| | Bifurcated contact | Flux protection | DC | G2R-1AZ | G2R-1Z | --- | --- |
| | | Fully sealed | | G2R-1AZ4 | G2R-1Z4 | --- | --- |
| | High-capacity | Flux protection | AC/DC | G2R-1A-E | G2R-1-E | --- | --- |
| | High-sensitivity | Flux protection | DC | G2R-1A-H | G2R-1-H | G2R-2A-H | G2R-2-H |
| | Double-winding latching | Flux protection | | G2RK-1A | G2RK-1 | G2RK-2A | G2RK-2 |
| Plug-in terminal | General-purpose | Unsealed | AC/DC | --- | G2R-1-S | --- | G2R-2-S |
| | LED indicator | | | --- | G2R-1-SN | --- | G2R-2-SN |
| | LED indicator with test button | | | --- | G2R-1-SNI | --- | G2R-2-SNI |
| | Diode | | DC | --- | G2R-1-SD | --- | G2R-2-SD |
| | LED indicator and diode | | | --- | G2R-1-SND | --- | G2R-2-SND |
| | LED indicator and diode with test button | | | --- | G2R-1-SNDI | --- | G2R-2-SNDI |
| | Plug-in terminal (Bifurcated crossbar contact) | | General-purpose | AC/DC | G2R-1A3-S | G2R-13-S | --- |
| LED indicator | | G2R-1A3-SN | G2R-13-SN | | --- | --- | |
| LED indicator and diode | | DC | G2R-1A3-SND | G2R-13-SND | --- | --- | |

- Note:**
1. When ordering, add the rated coil voltage to the model number.
Example: G2R-1A 12 VDC
Rated coil voltage
 2. OMRON has also prepared the above relays with AgSnIn contacts, which are more tolerant of large inrush currents and physical movement compared with relays with standard contacts. When ordering, add "-ASI" to the model number.
Example: G2R-1A-ASI
 3. Standard, NO contact type relays are TV-3 class products in accordance with the TV standards of the UL/CSA. Models with AgSnIn contacts are TV-5 class products.
Example: G2R-1A-ASI
When ordering a TV-8 class model, insert "-TV8" into the model number as follows:
Example: G2R-1A-TV8-ASI
 4. Models with CTI250 material are also available.
Contact your OMRON representative for more details.

Model Number Legend

G2R - - - VDC
 1 2 3 4 5 6 7 8 9 10

1. Relay Function

None: Single-side stable

K: Double-winding latching.

2. Number of Poles

1: 1 pole

2: 2 poles

3. Contact Form

None: ☐PDT

A: ☐PST-NO

4. Contact Type

None: Single

Z: Bifurcated

3: Bifurcated crossbar

5. Enclosure Ratings

None: Flux protection

4: Fully sealed

6. Terminals

None: Straight PCB

S: Plug-in

T: Quick-connect (upper bracket mounting)

7. Classification

None: General-purpose

E: High-capacity

H: High-sensitivity

N: LED indicator

D: Diode

ND: LED indicator and diode

8. Test button

I: Test button

Note: Applied for only SN and SND type

9. Contact Material

None: AgCdO

ASI: AgSnIn

10. Rated Coil Voltage

Refer to *Coil Ratings*.

■ Accessories (Order Separately)

Connecting Sockets

| Number of poles | Applicable Relay model | Track/surface-mounting Socket | Back-mounting Socket | |
|-----------------|--|-------------------------------|----------------------|-------------------|
| | | | Terminals | Model |
| 1 pole | G2R-1-S(N)(D)(ND)(NI)(NDI)G2R-13-S (G2R-1A3-S) | P2RF-05-E P2RF-05 | PCB terminals | P2R-05P, P2R-057P |
| | | | Solder terminals | P2R-05A |
| 2 poles | G2R-2-S(N)(D)(ND)(NI)(NDI) | P2RF-08-E P2RF-08 | PCB terminals | P2R-08P, P2R-087P |
| | | | Solder terminals | P2R-08A |

Note: See *Dimensions* for details on socket size.

Mounting Track

| Applicable socket | Description | Model |
|-------------------------|----------------|---|
| Track connecting socket | Mounting track | 50 cm (l) x 7.3 mm (t): PFP-50N 1 m (l) x 7.3 mm (t): PFP-100N 1 m (l) x 16 mm (t): PFP-100N2 |
| | End plate | PFP-M |
| | Spacer | PFP-S |
| Back connecting socket | Mounting plate | P2R-P* |

*Used to mount several P2R-05A and P2R-08A connecting sockets side by side.

Specifications

■ Coil Ratings

| Rated voltage | | 12 VAC | 24 VAC | 100/ (110) VAC | 120 VAC | 200/(220) VAC | 220 VAC | 230 VAC | 240 VAC |
|-------------------------------------|--------------|---|---------|-------------------|---------|----------------------|----------|----------------------|----------|
| Rated current | 50 Hz | 93 mA | 46.5 mA | 11 mA | 9.3 mA | 5.5 (4.0) mA | 5.1 mA | 4.7 (3.7) mA | 4.7 mA |
| | 60 Hz | 75 mA | 37.5 mA | 9/ (10.6) mA | 7.5 mA | 4.5 (5.3) mA | 4.1 mA | 3.8 (3.1) mA | 3.8 mA |
| Coil resistance | | 65 Ω | 260 Ω | 4,600 Ω | 6,500 Ω | 20,200 (25,000) Ω | 25,000 Ω | 26,850 (30,000) Ω | 30,000 Ω |
| Coil inductance (H) (ref. value) | Armature OFF | 0.19 | 0.81 | 13.34 | 21 | 51.3 | 57.5 | 62 | 65.5 |
| | Armature ON | 0.39 | 1.55 | 26.84 | 42 | 102 | 117 | 124 | 131 |
| Must operate voltage | | 80% max. of rated voltage | | | | | | | |
| Must release voltage | | 30% min. of rated voltage | | | | | | | |
| Max. voltage | | 140% of rated voltage (at 23°C) | | | | | | | |
| Power consumption | | Approx. 0.9 VA at 60 Hz (approx. 0.7 VA at 60 Hz) | | | | | | | |

Note: 1. Rated voltage of bifurcated crossbar contact type: 100/(110) VAC, 200/(220) VAC, 230 VAC (Approx. 0.7 VA at 60 Hz)
 2. Depending on the type of Relay, some Relays do not have coil specifications. Contact your OMRON representative for more details.

| Rated voltage | | 5 VDC | 6 VDC | 12 VDC | 24 VDC | 48 VDC | 100 VDC |
|-------------------------------------|--------------|---------------------------------|---------|---------|---------|---------|----------|
| Rated current (50/60 Hz) | | 106 mA | 88.2 mA | 43.6 mA | 21.8 mA | 11.5 mA | 5.3 mA |
| Coil resistance | | 47 Ω | 68 Ω | 275 Ω | 1,100 Ω | 4,170 Ω | 18,860 Ω |
| Coil inductance (H) (ref. value) | Armature OFF | 0.20 | 0.28 | 1.15 | 4.27 | 13.86 | 67.2 |
| | Armature ON | 0.39 | 0.55 | 2.29 | 8.55 | 27.71 | 93.2 |
| Must operate voltage | | 70% max. of rated voltage | | | | | |
| Must release voltage | | 15% min. of rated voltage | | | | | |
| Max. voltage | | 170% of rated voltage (at 23°C) | | | | | |
| Power consumption | | Approx. 0.53 W | | | | | |

Note: Rated voltage of bifurcated crossbar contact type: 12 VDC, 24 VDC

High-sensitivity Relays

| Rated voltage | | 5 VDC | 6 VDC | 12 VDC | 24 VDC | 48 VDC |
|---|--------------|---------------------------------|-------|--------|---------|---------|
| Rated current (50/60 Hz) (see note 1.) | | 71.4 mA | 60 mA | 30 mA | 15 mA | 7.5 mA |
| Coil resistance (see note 1.) | | 70 Ω | 100 Ω | 400 Ω | 1,600 Ω | 6,400 Ω |
| Coil inductance (H) (ref. value) | Armature OFF | 0.37 | 0.53 | 2.14 | 7.80 | 31.20 |
| | Armature ON | 0.75 | 1.07 | 4.27 | 15.60 | 62.40 |
| Must operate voltage | | 70% max. of rated voltage | | | | |
| Must release voltage | | 15% min. of rated voltage | | | | |
| Max. voltage | | 170% of rated voltage (at 23°C) | | | | |
| Power consumption | | Approx. 0.36 W | | | | |

Note: 1. The rated current and coil resistance are measured at a coil temperature of 23°C with a tolerance of $+15\%/_{-20\%}$ (AC rated current) or $\pm 10\%$ (DC coil resistance).
 2. LEDs are used for the built-in operation indicator. For models equipped with these indications, the VAC rated current must be increased by approximately 1 mA; the VDC rated current, by approximately 4 mA.
 3. Operating characteristics are measured at a coil temperature of 23°C.

Double-winding Latching Relays

| Rated voltage | | | 5 VDC | 6 VDC | 12 VDC | 24 VDC |
|--------------------|----------------------------------|--------------|--|--------|---------|---------|
| Set coil | Rated current (see note 1.) | | 167 mA | 138 mA | 70.6 mA | 34.6 mA |
| | Coil resistance (see note 1.) | | 30 Ω | 43.5 Ω | 170 Ω | 694 Ω |
| | Coil inductance (H) (ref. value) | Armature OFF | 0.073 | 0.104 | 0.42 | 1.74 |
| | | Armature ON | 0.146 | 0.208 | 0.83 | 3.43 |
| Reset coil | Rated current | | 119 mA | 100 mA | 50 mA | 25 mA |
| | Coil resistance | | 42 Ω | 60 Ω | 240 Ω | 960 Ω |
| | Coil inductance (H) (ref. value) | Armature OFF | 0.003 | 0.005 | 0.018 | 0.079 |
| | | Armature ON | 0.006 | 0.009 | 0.036 | 0.148 |
| Must set voltage | | | 70% max. of rated voltage | | | |
| Must reset voltage | | | 70% max. of rated voltage | | | |
| Max. voltage | | | 140% of rated voltage (at 23°C) | | | |
| Power consumption | | | Set coil: Approx. 850 mW; Reset coil: Approx. 600 mW | | | |

Note: 1. The rated current and coil resistance are measured at a coil temperature of 23°C with a tolerance of $\pm 10\%$.
2. Operating characteristics are measured at a coil temperature of 23°C.

■ Contact Ratings

PCB/Flux Protection, Plug-in, Quick-connect Terminal Relays

| Item | General-purpose, quick-connect terminal | | | | High-capacity | |
|--------------------------------|--|---|-----------------------------------|---|------------------------------------|---|
| Number of poles | 1 pole | | 2 poles | | 1 pole | |
| Load | Resistive load ($\cos\phi = 1$) | Inductive load ($\cos\phi = 0.4$; L/R = 7 ms) | Resistive load ($\cos\phi = 1$) | Inductive load ($\cos\phi = 0.4$; L/R = 7 ms) | Resistive load ($\cos\phi = 1$) | Inductive load ($\cos\phi = 0.4$; L/R = 7 ms) |
| Rated load | 10 (1) A at 250 VAC; 10 (1) A at 30 VDC | 7.5 A at 250 VAC; 5 A at 30 VDC | 5 A at 250 VAC; 5 A at 30 VDC | 2 A at 250 VAC; 3 A at 30 VDC | 16 A at 250 VAC; 16 A at 30 VDC | 8 A at 250 VAC; 8 A at 30 VDC |
| Rated carry current | 10 (1) A | | 5 A | | 16 A | |
| Max. switching voltage | 380 VAC, 125 VDC | | 380 VAC, 125 VDC | | 380 VAC, 125 VDC | |
| Max. switching current | 10 (1) A | | 5 A | | 16 A | |
| Max. switching power | 2,500 (250) VA, 300 (30) W | 1,875 VA, 150 W | 1,250 VA, 150 W | 500 VA, 90 W | 4,000 VA, 480 W | 2,000 VA, 240 W |
| Failure rate (reference value) | 100 mA at 5 VDC (1 mA at 5 VDC) | | 10 mA at 5 VDC | | 100 mA at 5 VDC | |

Note: 1. P level: $\lambda_{60} = 0.1 \times 10^{-6}$ /operation
2. (): Bifurcated crossbar contact type.

PCB/Flux Protection Relays

| Item | Bifurcated contacts | | High-sensitivity | | | |
|--------------------------------|-----------------------------------|---|-----------------------------------|---|-----------------------------------|---|
| Number of poles | 1 pole | | 1 pole | | 2 poles | |
| Load | Resistive load ($\cos\phi = 1$) | Inductive load ($\cos\phi = 0.4$; L/R = 7 ms) | Resistive load ($\cos\phi = 1$) | Inductive load ($\cos\phi = 0.4$; L/R = 7 ms) | Resistive load ($\cos\phi = 1$) | Inductive load ($\cos\phi = 0.4$; L/R = 7 ms) |
| Rated load | 5 A at 250 VAC; 5 A at 30 VDC | 2 A at 250 VAC; 3 A at 30 VDC | 5 A at 250 VAC; 5 A at 30 VDC | 2 A at 250 VAC; 3 A at 30 VDC | 3 A at 250 VAC; 3 A at 30 VDC | 1 A at 250 VAC; 1.5 A at 30 VDC |
| Rated carry current | 5 A | | 5 A | | 3 A | |
| Max. switching voltage | 380 VAC, 125 VDC | | 380 VAC, 125 VDC | | 380 VAC, 125 VDC | |
| Max. switching current | 5 A | | 5 A | | 3 A | |
| Max. switching power | 1,250 VA, 150 W | 500 VA, 90 W | 1,250 VA, 150 W | 500 VA, 90 W | 750 VA, 90 W | 250 VA, 45 W |
| Failure rate (reference value) | 1 mA at 5 VDC | | 100 mA at 5 VDC | | 10 mA at 5 VDC | |

Note: P level: $\lambda_{60} = 0.1 \times 10^{-6}$ /operation

PCB/Fully sealed Relays

| Item | General-purpose (single contact) | | | | Bifurcated contact | |
|-----------------------------------|--------------------------------------|---|--------------------------------------|---|--------------------------------------|---|
| Number of poles | 1 pole | | 2 poles | | 1 pole | |
| Load | Resistive load ($\cos\phi = 1$) | Inductive load ($\cos\phi = 0.4$; L/R = 7 ms) | Resistive load ($\cos\phi = 1$) | Inductive load ($\cos\phi = 0.4$; L/R = 7 ms) | Resistive load ($\cos\phi = 1$) | Inductive load ($\cos\phi = 0.4$; L/R = 7 ms) |
| Rated load | 8 A at 250 VAC; 8 A at 30 VDC | 6 A at 250 VAC; 4 A at 30 VDC | 4 A at 250 VAC; 4 A at 30 VDC | 1.5 A at 250 VAC; 2.5 A at 30 VDC | 5 A at 250 VAC; 5 A at 30 VDC | 2 A at 250 VAC; 3 A at 30 VDC |
| Rated carry current | 8 A | | 4 A | | 5 A | |
| Max. switching voltage | 380 VAC, 125 VDC | | 380 VAC, 125 VDC | | 380 VAC, 125 VDC | |
| Max. switching current | 8 A | | 4 A | | 5 A | |
| Max. switching power | 2,000 VA, 240 W | 1,500 VA, 120 W | 1,000 VA, 120 W | 375 VA, 75 W | 1,250 VA, 150 W | 500 VA, 90 W |
| Failure rate (reference value) | 100 mA at 5 VDC | | 10 mA at 5 VDC | | 1 mA at 5 VDC | |

Note: P level: $\lambda_{60} = 0.1 \times 10^{-6}/\text{operation}$

Latching Relays

| | | | | |
|-----------------------------------|--------------------------------------|---|--------------------------------------|---|
| Number of poles | 1 pole | | 2 poles | |
| Load | Resistive load ($\cos\phi = 1$) | Inductive load ($\cos\phi = 0.4$; L/R = 7 ms) | Resistive load ($\cos\phi = 1$) | Inductive load ($\cos\phi = 0.4$; L/R = 7 ms) |
| Rated load | 5 A at 250 VAC; 5 A at 30 VDC | 3.5 A at 250 VAC; 2.5 A at 30 VDC | 3 A at 250 VAC; 3 A at 30 VDC | 1.5 A at 250 VAC; 2 A at 30 VDC |
| Rated carry current | 5 A | | 3 A | |
| Max. switching voltage | 380 VAC, 125 VDC | | 380 VAC, 125 VDC | |
| Max. switching current | 5 A | | 3 A | |
| Max. switching power | 1,250 VA, 150 W | 875 VA, 75 W | 750 VA, 90 W | 375 VA, 60 W |
| Failure rate (reference value) | 100 mA at 5 VDC | | 10 mA at 5 VDC | |

Note: P level: $\lambda_{60} = 0.1 \times 10^{-6}/\text{operation}$

■ Characteristics

Standard Relays

| Item | 1 pole | 2 poles |
|--------------------------|--|--|
| Contact resistance | 30 m Ω max. (high-capacity type: 100 m Ω max.) | 50 m Ω max. |
| Operate (set) time | 15 ms max. | |
| Release (reset) time | AC: 10 ms max.; DC: 5 ms max. (w/built-in diode: 20 ms max.) | |
| Max. operating frequency | Mechanical: 18,000 operations/hr Electrical: 1,800 operations/hr (under rated load) | |
| Insulation resistance | 1,000 M Ω min. (at 500 VDC) | |
| Dielectric strength | 5,000 VAC, 50/60 Hz for 1 min between coil and contacts*; 1,000 VAC, 50/60 Hz for 1 min between contacts of same polarity | 5,000 VAC, 50/60 Hz for 1 min between coil and contacts*; 3,000 VAC, 50/60 Hz for 1 min between contacts of different polarity 1,000 VAC, 50/60 Hz for 1 min between contacts of same polarity |
| Vibration resistance | Destruction: 10 to 55 to 10 Hz, 0.75-mm single amplitude (1.5-mm double amplitude) Malfunction: 10 to 55 to 10 Hz, 0.75-mm single amplitude (1.5-mm double amplitude) | |
| Shock resistance | Destruction: 1,000 m/s ² Malfunction: 200 m/s ² when energized; 100m/s ² when no energized | |
| Endurance | Mechanical: AC coil: 10,000,000 operations min.; DC coil: 20,000,000 operations min. (at 18,000 operations/hr) Electrical: 100,000 operations min. (at 1,800 operations/hr under rated load) | |
| Ambient temperature | Operating: -40°C to 70°C (with no icing) | |
| Ambient humidity | Operating: 5% to 85% | |
| Weight | Approx. 17 g (plug-in terminal: approx. 20 g) | |

Note: Values in the above table are the initial values.

*2,000 VAC, 50/60 Hz for 1 minute when the P2R-05A or P2R-08A socket is mounted.

Double-winding Latching Relays

| Item | 1 pole | 2 poles |
|-----------------------------|--|---|
| Contact resistance | 30 mΩ max. | 50 mΩ max. |
| Set time | 20 ms max. | |
| Reset time | 20 ms max. | |
| Min. set/reset signal width | 30 ms max. | |
| Max. operating frequency | Mechanical: 18,000 operations/hr Electrical: 1,800 operations/hr (under rated load) | |
| Insulation resistance | 1,000 MΩ min. (at 500 VDC) | |
| Dielectric strength | 5,000 VAC, 50/60 Hz for 1 min between coil and contacts*; 1,000 VAC, 50/60 Hz for 1 min between contacts of same pole; 1,000 VAC, 50/60 Hz for 1 min between set and reset coil | 5,000 VAC, 50/60 Hz for 1 min between coil and contacts*; 3,000 VAC, 50/60 Hz for 1 min between contacts of different poles 1,000 VAC, 50/60 Hz for 1 min between contacts of same pole 1,000 VAC, 50/60 Hz for 1 min between set and reset coil |
| Vibration resistance | Destruction: 10 to 55 to 10 Hz, 0.75-mm single amplitude (1.5-mm double amplitude) Malfunction: 10 to 55 to 10 Hz, 0.75-mm single amplitude (1.5-mm double amplitude) | |
| Shock resistance | Destruction: 1,000 m/s ² (approx. 100G) Malfunction: Set: 500 m/s ² (approx. 50G); 200m/s ² (approx. 20G) Reset: 100 m/s ² (approx. 10G) | |
| Endurance | Mechanical: 10,000,000 operations min (at 18,000 operations/hr) Electrical: 100,000 operations min. (at 1,800 operations/hr under rated load) | |
| Ambient temperature | Operating: -40°C to 70°C (with no icing) | |
| Ambient humidity | Operating: 5% to 85% | |
| Weight | Approx. 17 g | |

Note: Values in the above table are the initial values.

*2,000 VAC, 50/60 Hz for 1 minute when the P2R-05A or P2R-08A socket is mounted.

■ Approved Standards

UL 508 (File No. E41643)

| Model | Contact form | Coil ratings | Contact ratings |
|---|--------------|------------------------------|--|
| G2R-1 G2R-14 G2R-1-H G2R-1-S G2R-1-T | SPDT | 3 to 110 VDC 3 to 240 VAC | 10 A, 30 VDC (resistive) 10 A, 250 VAC (general use) TV-3 (NO contact only) |
| G2R-1A G2R-1A4 G2R-1A-H G2R-1A-S G2R-1A-T | SPST-NO | | |
| G2R-1-E | SPDT | | 16 A, 30 VDC (resistive, NO contact only) 16 A, 250 VAC (general use, NO contact only) TV-3 (NO contact only); 1/3 hp, 120 VAC |
| G2R-1A-E | SPST-NO | | |
| G2R-2 G2R-24 G2R-2-H G2R-2-S | DPDT | | 5 A, 30 VDC (resistive) 5 A, 250 VAC (general use) TV-3 (NO contact only) |
| G2R-2A G2R-2A4 G2R-2A-H G2R-2A-S | DPST-NO | | |
| G2R-1A-ASI | SPST-NO | | 10 A, 30 VDC (resistive) 10 A, 250 VAC (general use) TV-5/TV-8 (NO contact only) |

CSA 22.2 No.0, No.14 (File No. LR31928)

| Model | Contact form | Coil ratings | Contact ratings |
|---|--------------|------------------------------|--|
| G2R-1 G2R-14 G2R-1-H G2R-1-S G2R-1-T | SPDT | 3 to 110 VDC 3 to 240 VAC | 10 A, 30 VDC (resistive) 10 A, 250 VAC (general use) T-3 (NO contact only) |
| G2R-1A G2R-1A4 G2R-1A-H G2R-1A-S G2R-1A-T | SPST-NO | | |
| G2R-1-E | SPDT | | |
| G2R-1A-E | SPST-NO | | 16 A, 30 VDC (resistive, N.O only) 16 A, 250 VAC (general use, NO contact only) TV-3 (NO contact only) |
| G2R-2 G2R-24 G2R-2-H G2R-2-S | DPDT | | 5 A, 30 VDC (resistive) 5 A, 250 VAC (general use) TV-3 (NO contact only) |
| G2R-2A G2R-2A4 G2R-2A-H G2R-2A-S | DPST-NO | | |
| G2R-1A-ASI | SPST-NO | | 10 A, 30 VDC (resistive) 10 A, 250 VAC (general use) TV-8 (NO contact only); 1/4 hp, 125 VAC |

SEV

| Contact form | Coil ratings | Contact ratings |
|--------------|------------------------------|---|
| 1 pole | 3 to 110 VDC 3 to 240 VAC | 16 A, 250 VAC1 (AgSnIn contact) 16 A, 30 VDC1 (AgSnIn contact) 10 A, 250 VAC1 5 A, 250 VAC3 10 A, 30 VDC1 |
| 2 poles | 3 to 110 VDC 3 to 240 VAC | 5 A, 250 VAC1 2 A, 380 VAC1 5 A, 30 VDC1 |

SEMKO

| Contact form | Coil ratings | Contact ratings |
|--------------|------------------------------|--|
| 1 pole | 3 to 110 VDC 6 to 240 VAC | 10/80 A, 250 VAC 3/100 A, 250 VAC 16/128 A, 250 VAC (AgSnIn contact) |
| 2 poles | | 5/40 A, 250 VAC |

TÜV (IEC 255)

| Contact form | Coil ratings | Contact ratings |
|--------------|--|---|
| 1 pole | 3 to 110 VDC, 6 VAC to 240 VAC (for Standard coil) 3 to 48 VDC (for K, U coil) 3 to 70 VDC (for H coil) | 10 A, 250 VAC ($\cos\phi = 1.0$) 10 A, 30 VDC (0 ms) 16 A, 250 VAC ($\cos\phi = 1.0$) (AgSnIn contact) |
| 2 poles | | 8 A, 250 VAC ($\cos\phi = 0.4$) 5 A, 250 VAC ($\cos\phi = 1.0$) 5 A, 30 VDC (0 ms) 2.5 A, 250 VAC ($\cos\phi = 0.4$) |

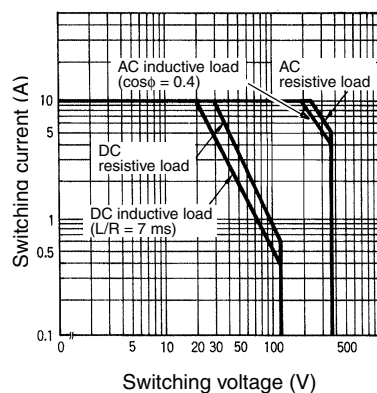
VDE (IEC 255, VDE 0435), IMQ

| Contact form | Coil ratings | Contact ratings |
|--------------|---|---|
| 1 pole | 5, 6, 9, 12, 18, 24, 48, 60, 100, 110 VDC 12, 18, 24, 48, 50, 100/(110), 110, 120, 200/(220), 220, 230, 240 VAC | 10 A, 250 VAC ($\cos\phi = 1.0$) 10 A, 30 VDC (0 ms) 16 A, 250 VAC ($\cos\phi = 1.0$) |
| 2 poles | 5, 6, 9, 12, 18, 24, 48, 60, 100, 110 VDC 12, 18, 24, 48, 50, 100/(110), 110, 120, 200/(220), 220, 230, 240 VAC | 5 A, 250 VAC ($\cos\phi = 1.0$) 5 A, 30 VDC (0 ms) |

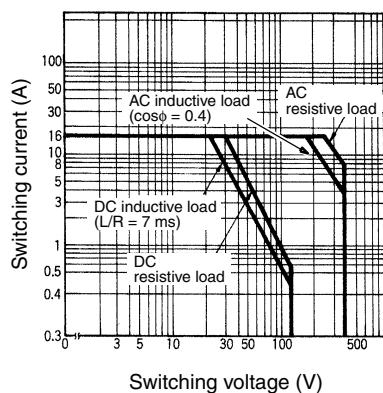
Engineering Data

Maximum Switching Power

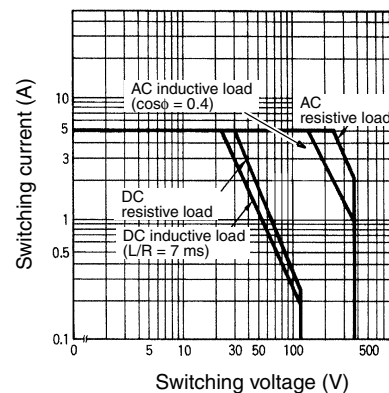
Flux Protection/Plug-in Relays G2R-1, G2R-1A, G2R-1-S, G2R-1-T, G2R-1A-T



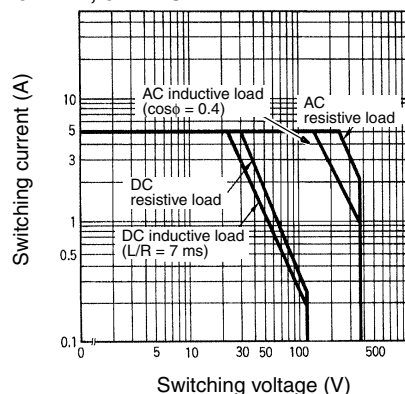
G2R-1-E, G2R-1A-E



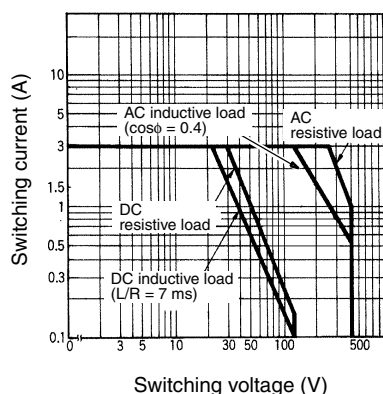
G2R-1Z, G2R-1AZ



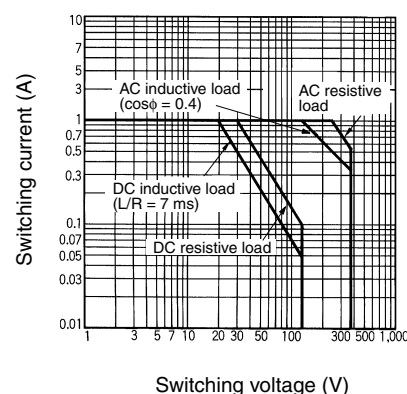
G2R-1-H, G2R-1A-H, G2R-2 G2R-2A, G2R-2-S



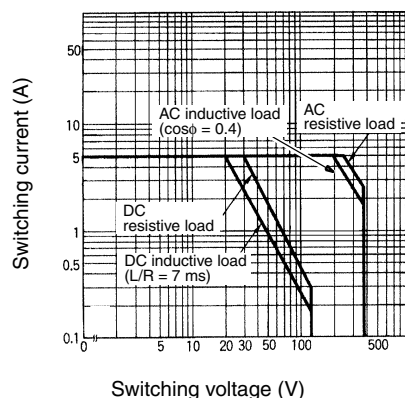
G2R-2-H, G2R-2A-H



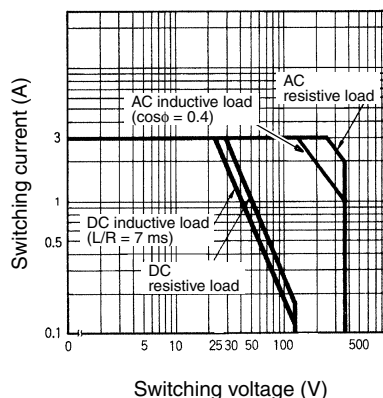
G2R-13-S, G2R-1A3-S

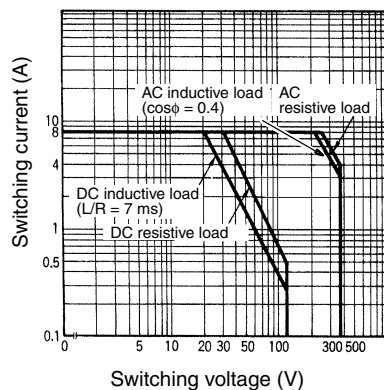
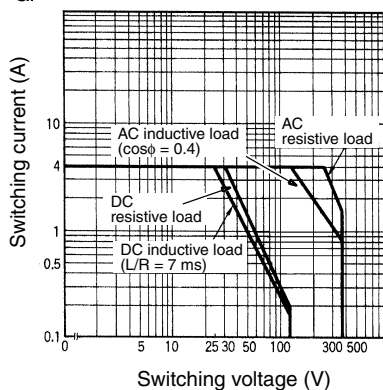
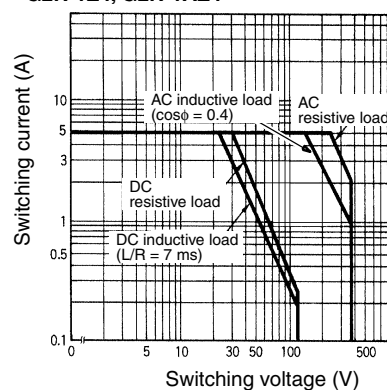
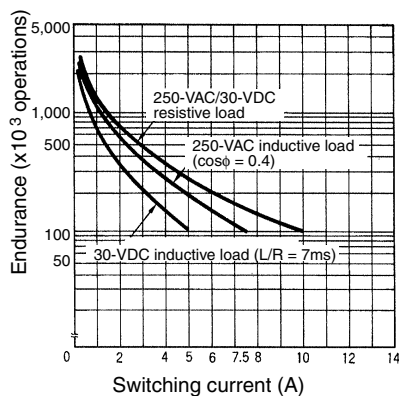
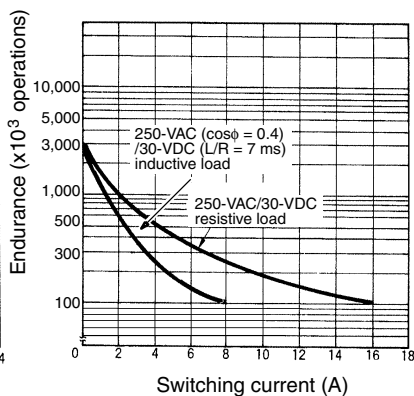
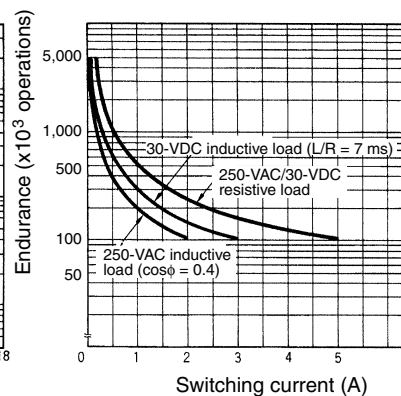
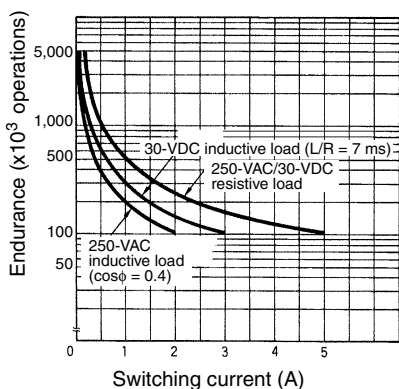
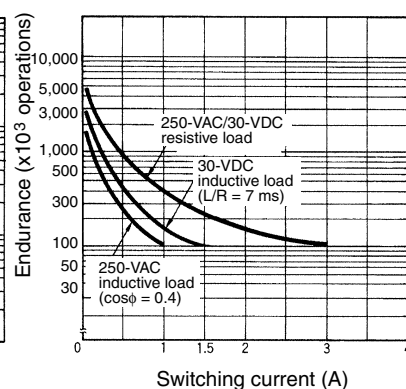
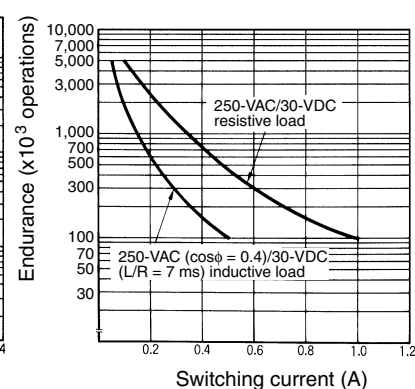


G2RK-1A, G2RK-1

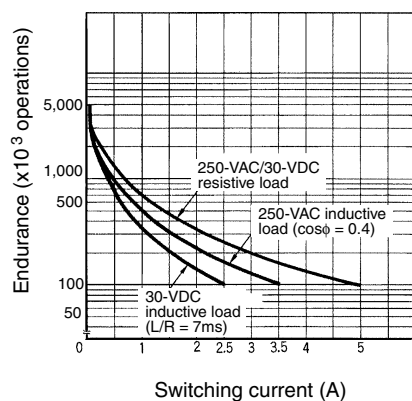


G2RK-2A, G2RK-2

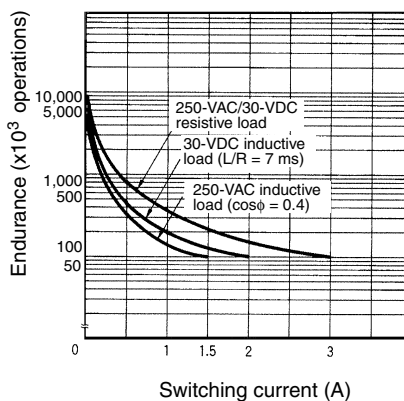


Fully Sealed Relays**G2R-14, G2R-1A4****G2R-24, G2R-2A4****G2R-1Z4, G2R-1AZ4****Endurance****Flux Protection/Plug-in Relays****G2R-1, G2R-1A, G2R-1-S, G2R-1-T, G2R-1A-T****G2R-1-E, G2R-1A-E****G2R-1Z, G2R-1AZ****G2R-1-H, G2R-1A-H, G2R-2, G2R-2A, G2R-2-S****G2R-2-H, G2R-2A-H****G2R-13-S, G2R-1A3-S**

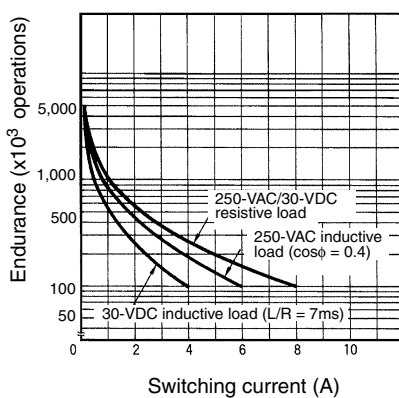
G2RK-1A, G2RK-1



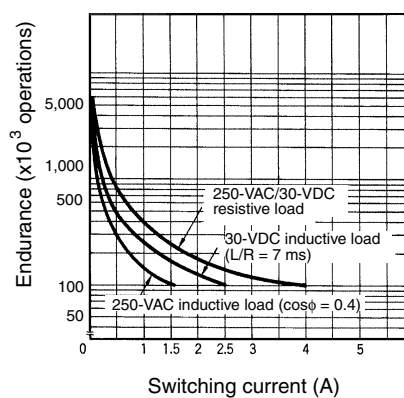
G2RK-2A, G2RK-2

**Fully sealed Relays**

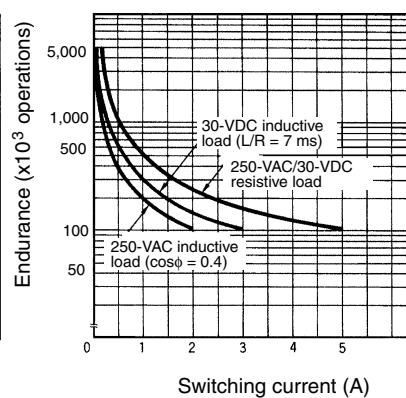
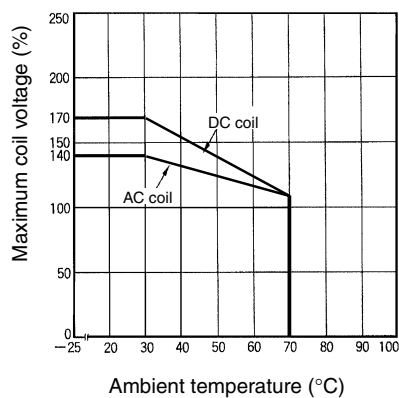
G2R-14, G2R-1A4



G2R-24, G2R-2A4



G2R-1Z4, G2R-1AZ4

**Ambient Temperature vs Maximum Coil Voltage**

Note: The maximum coil voltage refers to the maximum value in a varying range of operating power voltage, not a continuous voltage.

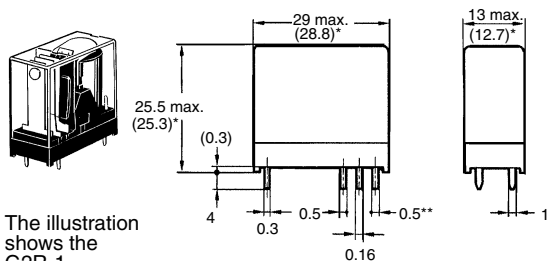
Dimensions

Note: 1. All units are in millimeters unless otherwise indicated.

2. Orientation marks are indicated as follows:  

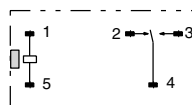
Relays with PCB Terminals

SPDT Relays G2R-1, G2R-1Z, G2R-1-H



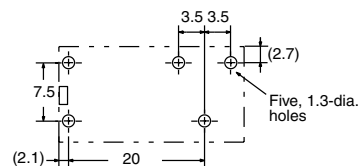
The illustration shows the G2R-1.

Terminal Arrangement/ Internal Connections (Bottom View)



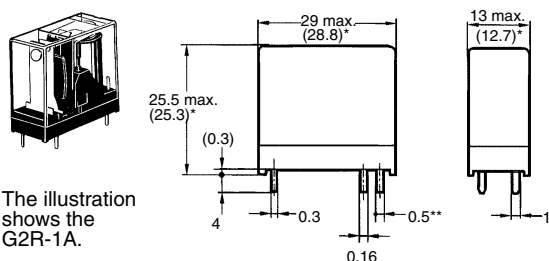
Mounting Holes (Bottom View)

Tolerance: ± 0.1

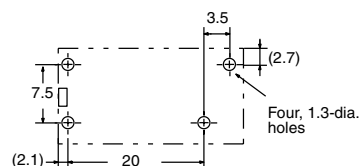
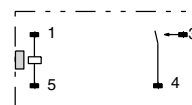


(No coil polarity)

SPST-NO Relays G2R-1A, G2R-1AZ, G2R-1A-H

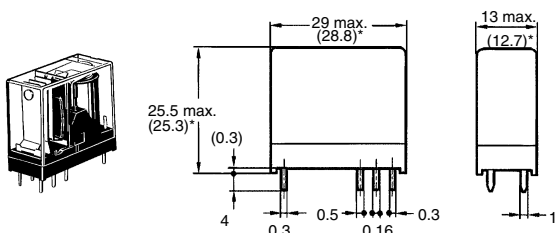


The illustration shows the G2R-1A.

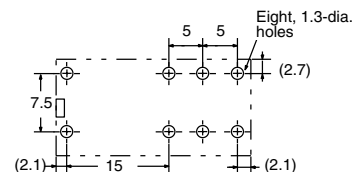
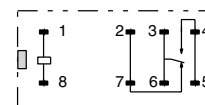


(No coil polarity)

SPDT/High-capacity Relays G2R-1-E

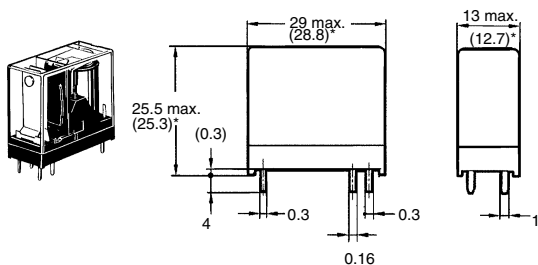


*Average value
**0.3 (-H Type)

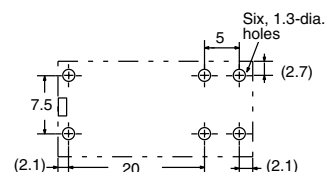
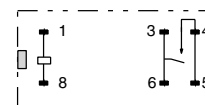


(No coil polarity)

SPST-NO/High-capacity Relays G2R-1A-E



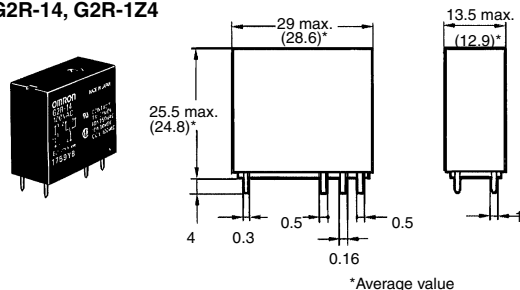
*Average value



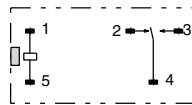
(No coil polarity)

Relays with PCB Terminals

SPDT Relays G2R-14, G2R-1Z4

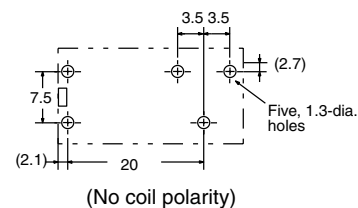


Terminal Arrangement/ Internal Connections (Bottom View)

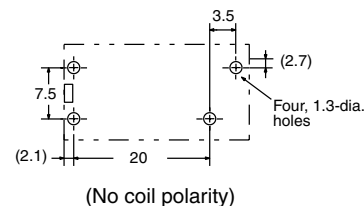
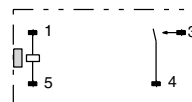
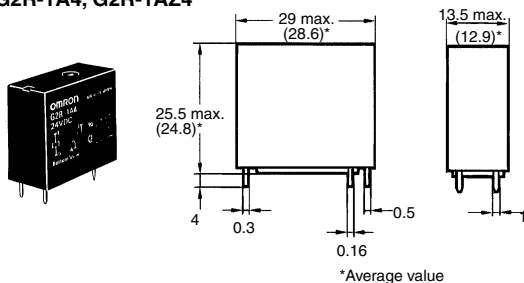


Mounting Holes (Bottom View)

Tolerance: ± 0.1



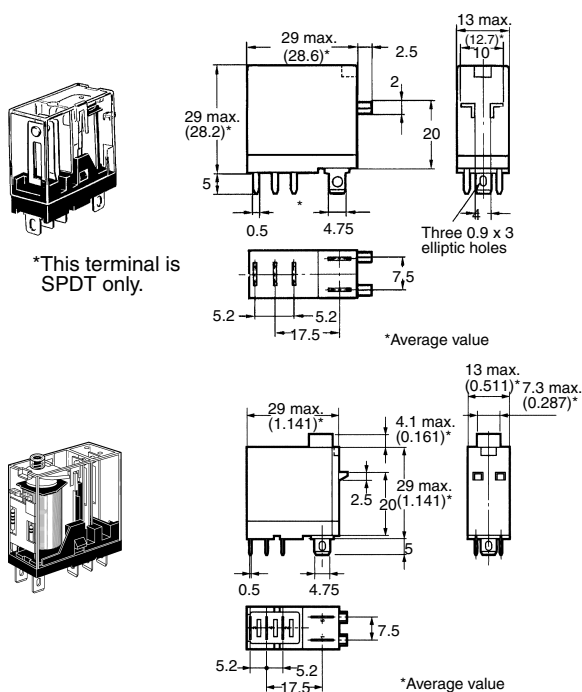
SPST-NO Relays G2R-1A4, G2R-1AZ4



Relays with Plug-in Terminals

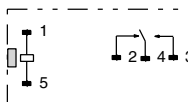
SPDT Relays

G2R-1-S, G2R-1-SD, G2R-1-SN, G2R-1-SND, G2R-1-SNI, G2R-1-SNDI
G2R-13-S, G2R-13-SD, G2R-13-SN, G2R-13-SND

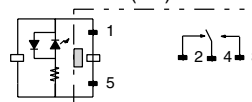


Terminal Arrangement/Internal Connections (Bottom View)

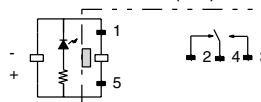
G2R-1-S, G2R-13-S



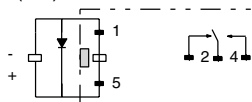
G2R-1-SN, G2R-1-SNI,
G2R-13-SN (AC)



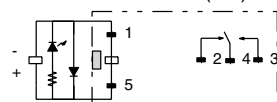
G2R-1-SN, G2R-1-SNI,
G2R-13-SN (DC)



G2R-1-SD, G2R-13-SD
(DC)



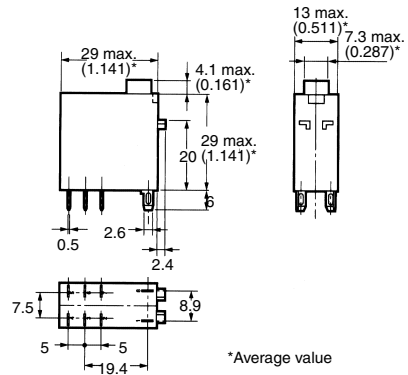
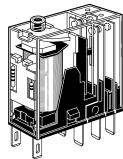
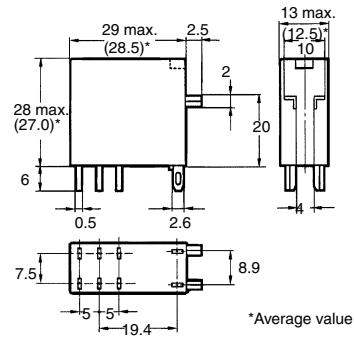
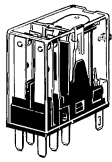
G2R-1-SND, G2R-1-SNDI,
G2R-13-SND (DC)



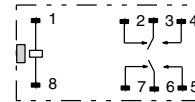
(After confirming coil
polarity, wire correctly.)
(Except G2R-1-S,
G2R-13-S)

DPDT Relays

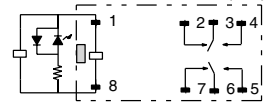
G2R-2-S, G2R-2-SD, G2R-2-SN, G2R-2-SNI, G2R-2-SNDI
G2R-2-SND

**Terminal Arrangement/Internal Connections (Bottom View)**

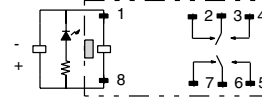
G2R-2-S



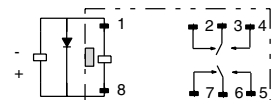
G2R-2-SN G2R-2-SNI (AC)



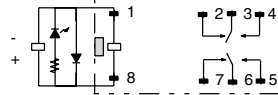
G2R-2-SN G2R-2-SNI (DC)



G2R-2-SD (DC)



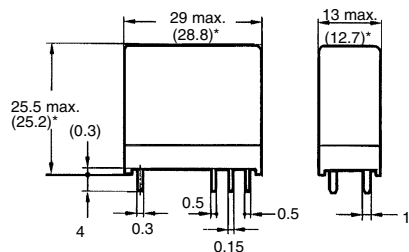
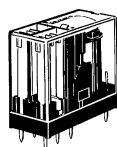
G2R-2-SND G2R-2-SNDI (DC)



(After confirming coil polarity, wire correctly.)

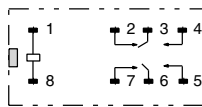
Relays with PCB Terminals

DPDT Relays G2R-2, G2R-2-H



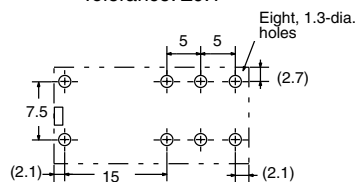
*Average value

Terminal Arrangement/ Internal Connections (Bottom View)



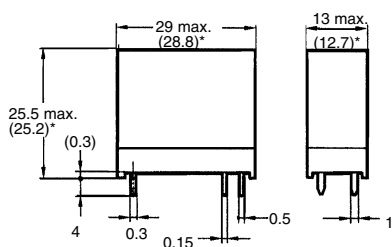
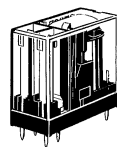
Mounting Holes (Bottom View)

Tolerance: ± 0.1

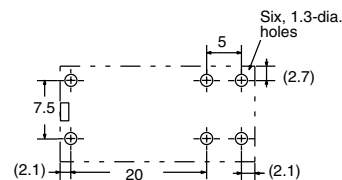
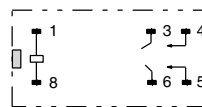


(No coil polarity)

DPST-NO Relays G2R-2A, G2R-2A-H

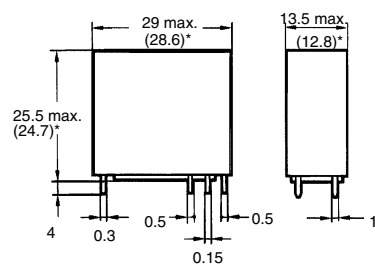


*Average value

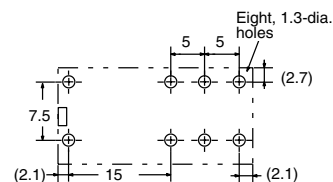
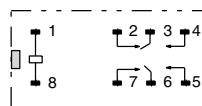


(No coil polarity)

DPDT Relays G2R-24

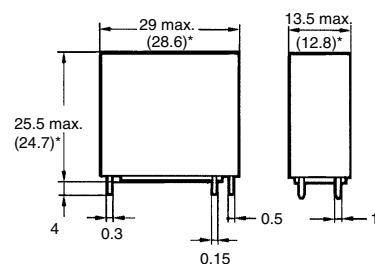
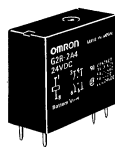


*Average value

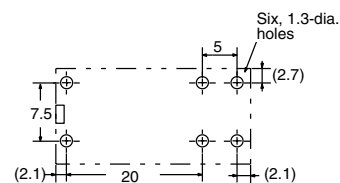
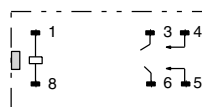


(No coil polarity)

DPST-NO Relays G2R-2A4



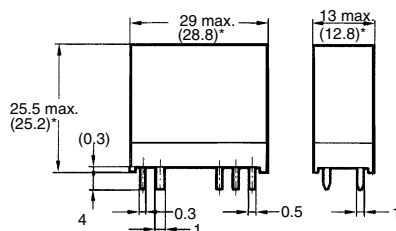
*Average value



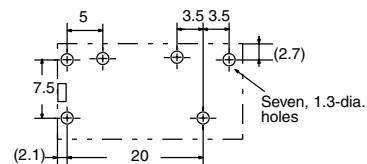
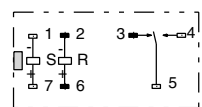
(No coil polarity)

Double-winding Latching Relays with PCB Terminals

SPDT Relays G2RK-1



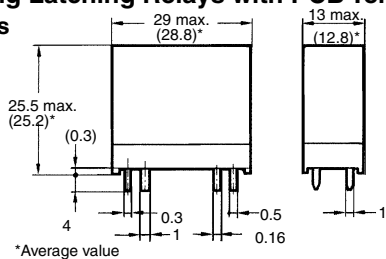
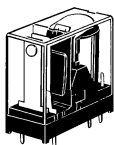
*Average value



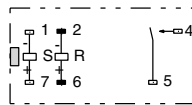
(After confirming coil polarity, wire correctly.)

Double-winding Latching Relays with PCB Terminals

SPST-NO Relays G2RK-1A

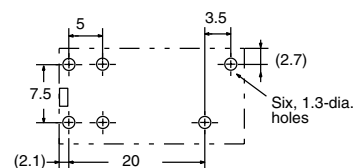


Terminal Arrangement/ Internal Connections (Bottom View)



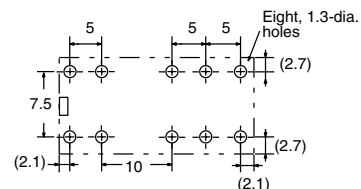
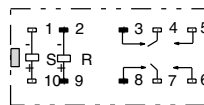
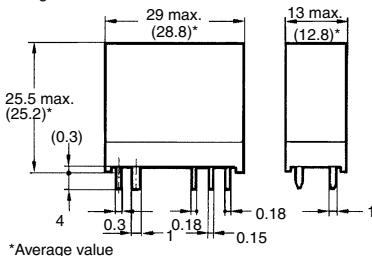
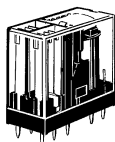
Mounting Holes (Bottom View)

Tolerance: ± 0.1



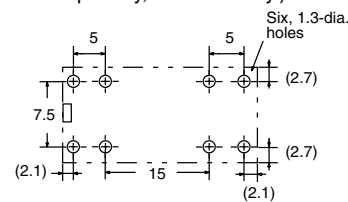
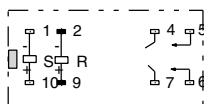
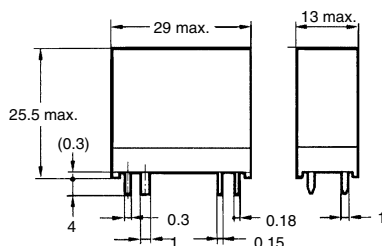
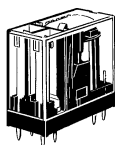
(After confirming coil polarity, wire correctly.)

DPDT Relays G2RK-2



(After confirming coil polarity, wire correctly.)

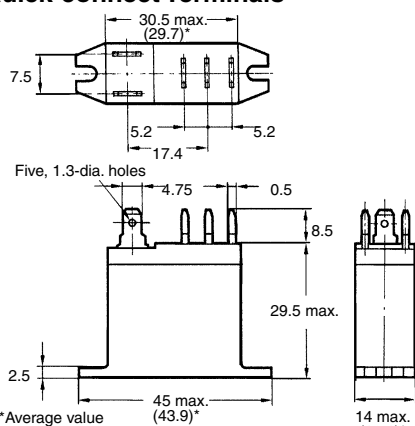
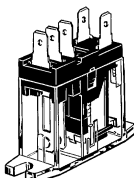
DPST-NO Relays G2RK-2A



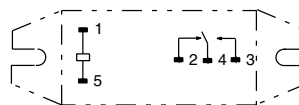
(After confirming coil polarity, wire correctly.)

Relays with Quick-connect Terminals

SPDT Relays G2R-1-T



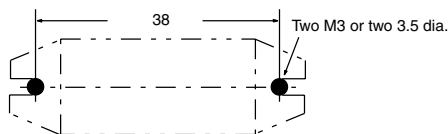
Terminal Arrangement/Internal Connections (Bottom View)



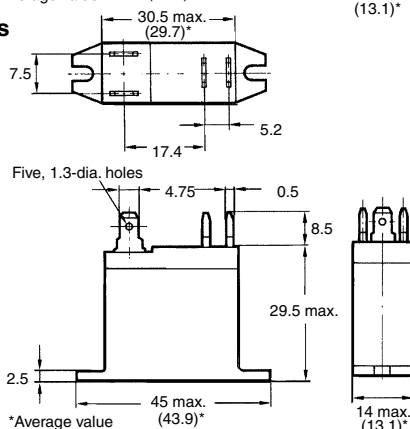
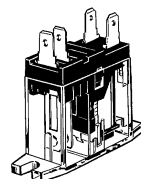
(No coil polarity)

Mounting Holes (Bottom View)

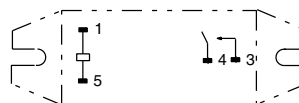
Tolerance: ± 0.1



SPST-NO Relays G2R-1A-T

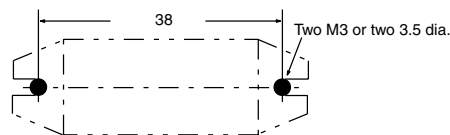


Terminal Arrangement/Internal Connections (Bottom View)



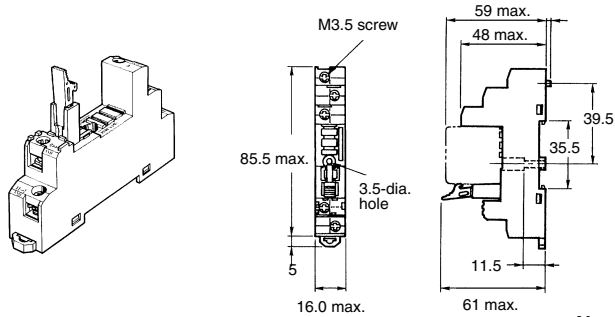
(No coil polarity)

Mounting Holes (Bottom View)

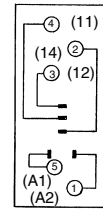


Note: Model number of quick-connect terminal is 187.

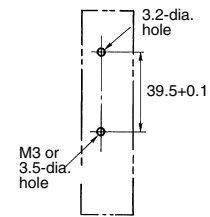
Track/Surface Mounting Sockets P2RF-05-E



Terminal Arrangement (Top View)

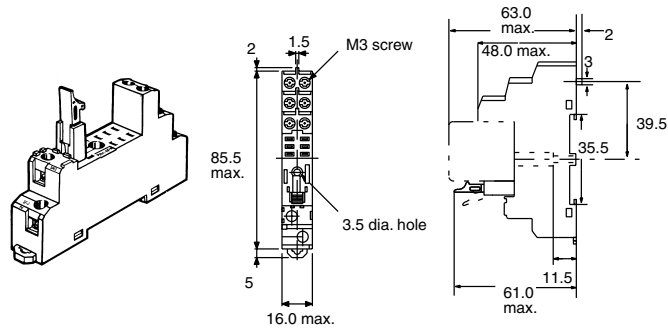


Mounting Holes (for Surface Mounting)

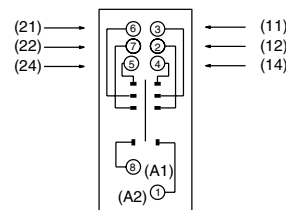


Note: Pin numbers in parentheses apply to DIN standard.

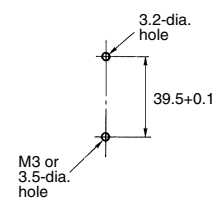
P2RF-08-E



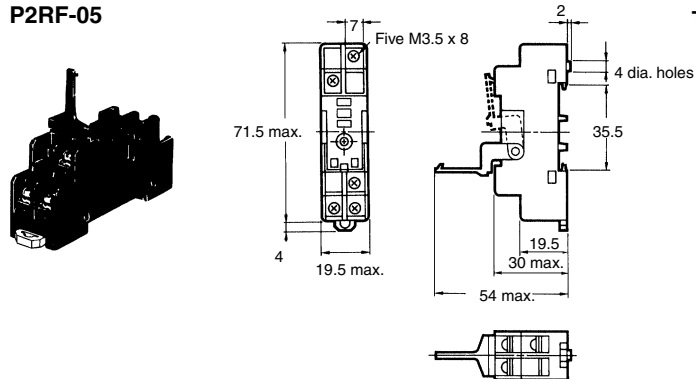
Terminal Arrangement (Top View)



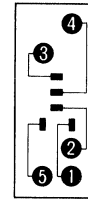
Mounting Holes (for Surface Mounting)



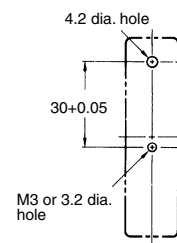
P2RF-05



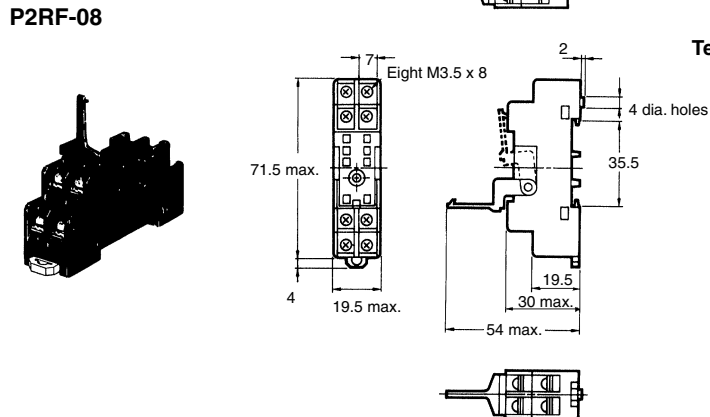
Terminal Arrangement



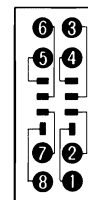
Mounting Holes (for Surface Mounting)



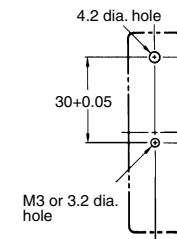
P2RF-08



Terminal Arrangement

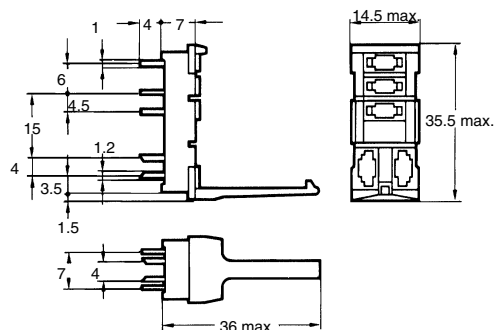
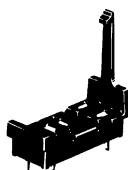


Mounting Holes (for Surface Mounting)

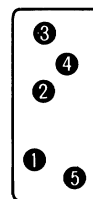


Back Connecting Sockets

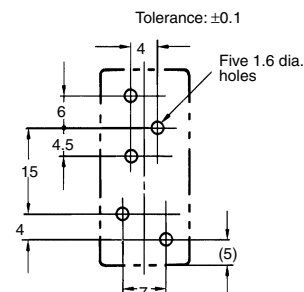
P2R-05P (1-pole)



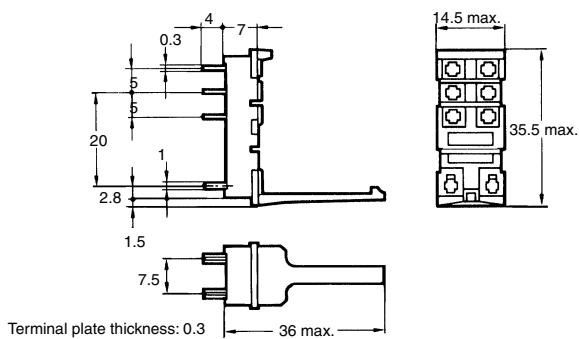
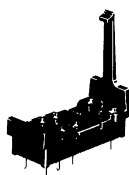
Terminal Arrangement



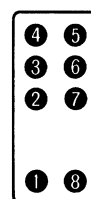
Mounting Holes



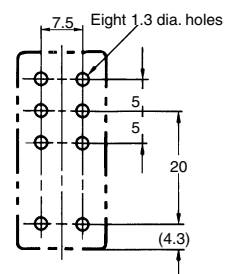
P2R-08P (2-pole)



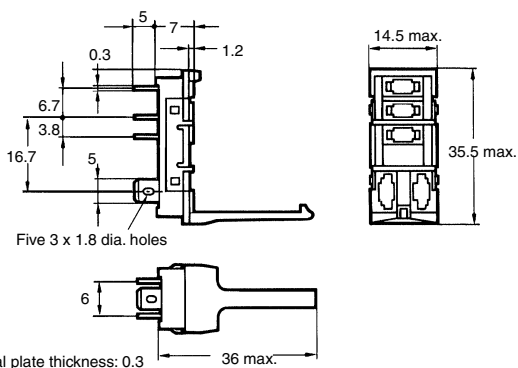
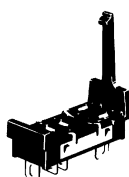
Terminal Arrangement



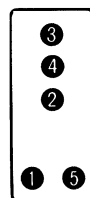
Mounting Holes



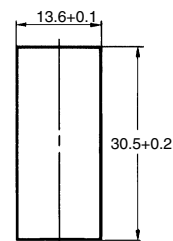
P2R-05A (1-pole)



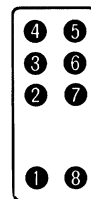
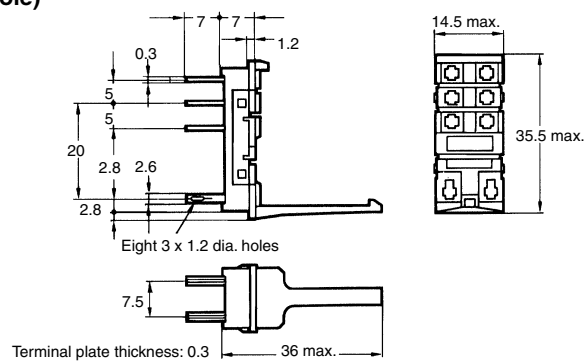
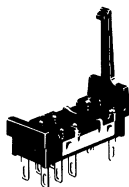
Terminal Arrangement



Panel Cutout

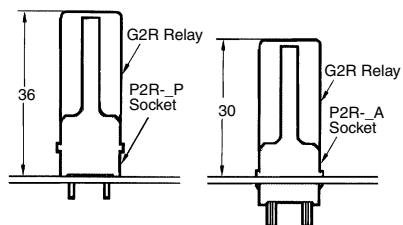


P2R-08A (2-pole)



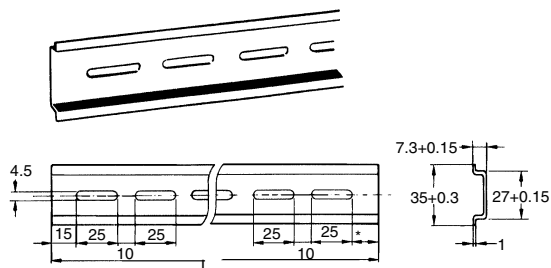
Recommended thickness of the panel is 1.6 to 2.0 mm

Mounting Height of Relay with Socket

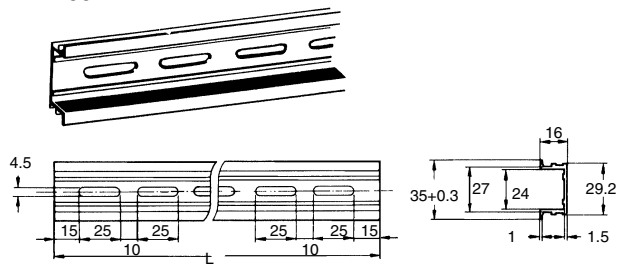


Mounting Track

PFP-100N, PFP-50N



PFP-100N2



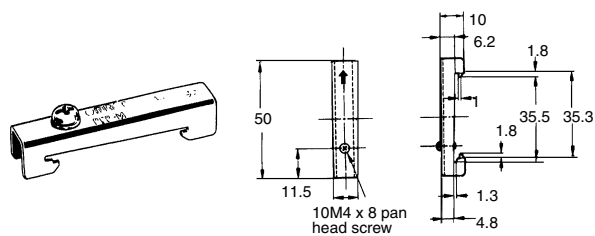
It is recommended to use a panel 1.6 to 2.0 mm thick.

L: Length

| | |
|-------|-----------|
| 1 m | PFP-100N |
| 50 cm | PFP-50N |
| 1 m | PFP-100N2 |

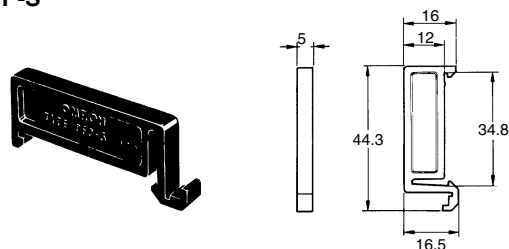
End Plates

PFP-M



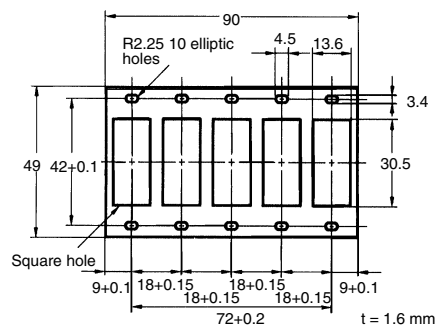
Spacers

PFP-S



Mounting Plates

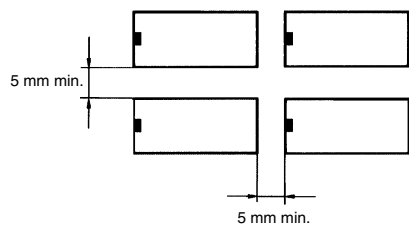
P2R-P



Precautions

■ Mounting

When mounting a number of relays on a PCB, be sure to provide a minimum mounting space of 5 mm between the two juxtaposed relays as shown below.



The above minimum mounting space is necessary due to mutual thermal interference generated by the relays. This restriction may be ignored, however, depending on the operating conditions of the relays. Consult OMRON for details.

There is no restriction on the mounting direction of each relay on the PCB.

When using this circuit, confirm the set and reset states and then take into account the circuit constant.

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.